

# SEQUENCE LISTING

<110> Smith, Hilde E

<120> ENVIRONMENTALLY REGULATED GENES OF STREPTOCOCCUS SUIS

<130> 2183-6055

<140> To be assigned

<141> 2003-08-01

<150> PCT/NL02/00073

<151> 2002-01-31

<150> EP 01200419.8

<151> 2001-02-02

<160> 47

<170> PatentIn version 3.2

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gaaaagaaag gaatggaaat cgctaaagaa atccgggctc gagatcctta tgctgctatt	180
gtctttgtaa caactcactc agaattnatg ccagtaacat atcgttatca ggtttctgct	240
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 gcgggtttggt cagngtgacc atccatgaaa tcagcgacag cagccccaga cgcataatca 180  
 gcgccagtga taaccccagc aaacgcgctt tatcngttg ttttggcggc agtttgtcag 240  
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 tttgttttgt gaagtgttac actaatagaa gtgaagaatt ttggagggtt gtcagatgaa 180  
 tgtgcaagaa aatgtcttac cgagtataga attattggtt ttgaaacgtg atggacggac 240  
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 gctatactag aaacggttatt aagtcccgaa aaggtagttt atagactagt taatatttgc 180  
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 tggntangtt agaaaattgg ttaaacacca aacaaggcca ggtgtttcat tacaagatgg 180  
 aaaagattga gtatgcccta gaactgctag ggaatcccca gttngcagtt ccggtcattc 240  
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 cagagtatcg ggntggtcgc acgcccnatc cagatgtcan gtgtaacaag ganatcaagt 180  
 tcaaggcttt nttggantac gntatgaact tgggtgcgga ctatgtggcg acagggcact 240  
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gtcatccaaa taaggaaatt gttttatttt ggactaaagt tacgtgtaaa aagngcatac 180  
  
aaaaccaaca ccttntgttg naatttttttg ataagggtgtt acaatgatag agcataaaca 240  
  
gttttaccga ttttgggtng aagcgtaatc gtnaaatttg ttatgcntaa tgaggtaata 300  
  
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 atgtagaaga gtccgaaggg ctctttttnt actgggtcaa agttcggtan gggttgggaa 180  
 tagaaaaatag aaaatatttt aatcgtatgt aaaagcaggt gaaattcatg ctaaattttg 240  
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 agaagcagtc ctccaattgg agttgctcgg acatgatttc tttatctata cagatgctaa 240  
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gtagaagcag ttttaagagg tatccaggta tgaatattca acaattacgc tacgttgtag 180

ccattgcaaa cagtgggtaca tttcgagagg cggctgagaa aatgtangtg tcccagccta 240

gntngtccat ttccattcgt gatttggaaa aagagttagg ttttcaaatt tttngccgaa 300

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 gtttattttt tagttaaatt ttgttataat agatggcaaa attgaagaga attgtaggnt 180  
 gaaatatgtc aaagattaag attgttacgg attcaagtac gactatcgaa cccagtttgg 240  
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<221> misc\_feature  
<222> (4)..(4)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (10)..(10)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (42)..(42)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (62)..(62)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (68)..(68)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (124)..(124)  
<223> n is a, c, g, or t

<220>  
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<222> (193)..(193)  
<223> n is a, c, g, or t

<220>  
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<222> (198)..(198)  
<223> n is a, c, g, or t

<220>  
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 <222> (276)..(276)  
 <223> n is a, c, g, or t

<220>  
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 <222> (322)..(322)  
 <223> n is a, c, g, or t

<220>  
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 <222> (329)..(329)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (341)..(341)  
 <223> n is a, c, g, or t

<400> 19  
 aggntgctan gaaaaaattg gctcacaaat catttctttt anttgacgat tgcctttctt 60  
 tngatttngg tgatttactt tagtggaata gataaacgtt ggattatttt ggcaagtttt 120  
 cttnacttca ttccatcgca gattttatac cgtcgtcgcc taagagagcg actccaagaa 180  
 gaccagccca agnaggcngg ttttttgatg tgtaaattgg actacaattc tttattaact 240  
 gtgctataat agtttttgca gaaaagtaaa gacggnggct ctaatttctg aaaggtaggt 300  
 ggtgtctatg ggcaaatcat cnaaatctna cagaaaggag n 341

<210> 20  
 <211> 264  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> iri 32

<220>  
 <221> misc\_feature  
 <222> (15)..(15)  
 <223> n is a, c, g, or t

<220>  
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<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (59)..(59)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (78)..(78)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (86)..(86)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (205)..(205)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (221)..(221)

<223> n is a, c, g, or t

<400> 20

gaatcgaatt ggagntcgcc cctcaaacgg ctggcatatc ttttcaatcc ttatctntna 60

gtcgcaagcg acaagganta gggatnatat aatctcctga gaatactgga ctcaactgagt 120

ctggtatttt cattttatgc tataatggtt tcatgacaaa tcgaatttta gatatggaac 180

aaatgcagga cgaggaatat gtcgngcgta ccctgcgtcc ncagaaatta aacgaataca 240

tcggtcagga caaggtaaag gacc 264

<210> 21

<211> 338

<212> DNA

<213> Streptococcus suis

<220>

<223> iri 34

<220>

<221> misc\_feature

<222> (16)..(16)

<223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (26)..(26)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (112)..(112)  
 <223> n is a, c, g, or t

<220>  
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 <222> (137)..(137)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (186)..(186)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (205)..(205)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (304)..(304)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (307)..(307)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (332)..(332)  
 <223> n is a, c, g, or t

<400> 21  
 acagtagcct atgaantctt ggaagnaagc ggaagaagc aaaccattag ttctgaccaa 60  
 atttttagttc ccataggagg aggtggtctg gttgcaggcg ttctggccta tntgaaagaa 120  
 catgcacctg aaattangat tgttggtggt gaagcaagtg gggcacggtc aatgaaagcg 180  
 gctttngata aaggctgctc ggttnaatta gaccaaattg ataaatttgc tgacggtatt 240  
 gcggtacaga aagtcggtta gtcgacctac gaagtggctc ggaaatacgt agatcgcttg 300

attngtntgg atgaagggg gatttccggg antatttt

338

<210> 22  
<211> 351  
<212> DNA  
<213> Streptococcus suis

<220>  
<223> iri 4

<220>  
<221> misc\_feature  
<222> (27)..(27)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (64)..(64)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (68)..(68)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (73)..(73)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (90)..(90)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (100)..(100)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (132)..(132)  
<223> n is a, c, g, or t

<220>  
<221> misc\_feature  
<222> (146)..(146)  
<223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (230)..(230)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (242)..(242)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (251)..(251)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (308)..(308)  
 <223> n is a, c, g, or t

<400> 22  
 aaaatggcag gggggaccca agggaantct tttctgatat caagggacaa cctgggtcagt 60  
 cagntggntc aantacaagc cttaccactn gaacaaatan tcgaaaaccg ttatcaacgc 120  
 tttagaaaat antaggaaga cctagnattt ttttgataga tttgatacaa tggataaaat 180  
 aatttcagga ggttttccat gttagtaaaa gcagatctat caaacgcagn agaattgcta 240  
 cntattcagc nccgagcatt tgcggcttta tataaaacct atcaggacca gtacaaccct 300  
 gccattgnaa ctatggacta tttccaatca cgctttgcac gaccaaattg t 351

<210> 23  
 <211> 362  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> iri 7

<220>  
 <221> misc\_feature  
 <222> (83)..(83)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (87)..(87)



<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (176)..(176)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (229)..(229)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (252)..(252)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (273)..(273)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (294)..(294)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (333)..(333)

<223> n is a, c, g, or t

<400> 23

gaaattgatg ggcattcttg gtattaatag gaactccatg gctcaatctt cttcggttta 60

ttggtaatag tagttaccgt cangaanaaa tcgcaaagta taaaaagtgc tgtgaagaga 120

aaaaaagaaa ataagaatct ttctaaacaa gataagagcc gtcaggctct tttttngata 180

taatatagtg gatatgggta attaaaattg tcagaaaaga ctattttana gattaacact 240

ctctgaaaat cntcattaac aagaaaagag gcnggggtca agccccgcat cacntctcaa 300

agtttagcgtc aacatctcag cgcagtagtg gtngattggg tttaacagtc cagtggagtg 360

tc 362

<210> 24

<211> 362

<212> DNA

<213> Streptococcus suis

<220>

<223> iri 8, 26

<220>

<221> misc\_feature

<222> (15)..(15)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (61)..(61)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (90)..(90)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (179)..(179)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (181)..(181)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (268)..(268)

<223> n is a, c, g, or t

<220>

<221> misc\_feature

<222> (356)..(356)

<223> n is a, c, g, or t

<400> 24

ttcggaatcc ttctntctcc attggaacag ggatacaaag ggacgttaag gaaatccgta 60

ngaaaatagg aaattgacgc agtgtgctan acacacaggg aagtttatct tttccacta 120

ggattttagt ccgtgttcaa ctaagatacg agatatgttc tggtttacca gaaatttcng 180

nagaaaatta ggagactgac gctgagtggt aacactcaag gaaggctatc tatttttcta 240

agaaattaat ctcgagttca atttcttntg attagtaa ataatgaattg tatctatattt 300

ttgggggtatc gccaaagcggg aaggcaaggg actttgactc cctcatgccc cggttngcat 360

cc 362

<210> 25

<211> 405

<212> DNA

<213> Streptococcus suis

<220>

<223> ivs 1

<400> 25

aatgatgttt gataaacacg ccaatctcaa atacaaatth ggtaatcgte atttctgggc 60

agagggatat tatgtaagta cggttggact aaatgaagcc acaattaaga aatatataca 120

agaacaggaa aaacatgata tagcacttga taagttgagt gtaaaagagt atgaagatcc 180

ctttagggat aatggcaagt agtacgaatg cctctttaag aggctagtga cgagtcaaaa 240

gcagtgaggc ttgaacaaag tgaaagccag cgtctttagg cgctggctgg tgatgtgggc 300

ttatagccct tgttcaaacc acccgtttga cgggtgggtca tgattttttt tgaatatttt 360

tcactatttt gttttacaaa ctagccacct tgtgttagac tatag 405

<210> 26

<211> 410

<212> DNA

<213> Streptococcus suis

<220>

<223> ivs 11

<400> 26

taccaccata tcaccaatat cacgcgccca gatgcgccaa tcgaagtggg ggatgtggct 60

ggttcccttt gtgaaaacaa cgacaagttt gcgggtcaatc gtgaattacc acgggtagaa 120

gtaggagaca ctttggtcat tcatgacagt ggggccacg gcttctccat gggctacaac 180

tacaacgggc gtctgcgttc ttctgaaatc cttttgcagg aagatggcac agcgcggatg 240

attcgtcgtg ctgaaacacc agaagactat ttgcgaacta ttacgggttt tgattttgac 300

aggtaagtct tggaaaagac tagggaatth ggtataatag ggttattgaa agattgttaa 360

aaacaatcag aagtatactt tttagaagag tcaggagatt gacagatgaa 410

<210> 27  
 <211> 412  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 15

<400> 27  
 gggctatggt ataattaaaa gacatgtata gtcagaatga aaatgaattg attgccattg 60  
 gtgagagaat tggaaaggcc tgtaagccaa atcaagttct agtattatca ggggatttgg 120  
 gtgctgggaa aacaactctg accaagggtt tggccaagggtt gttaaaaatt gaacagatga 180  
 ttaagagtcc tacttatacg attgttcgag agtatgagggt ggccatgccg ctctatcact 240  
 tagatgttta tcgaattgga gatgaccctg actcgattga tttggatgat tttctctatg 300  
 gaggaggtct aacggttatc gagtggggag aattactgga tgcagtcta tttgatgact 360  
 atttgctcat tcgtatagag aaagagggtg atggctcgacg attgacagtc ga 412

<210> 28  
 <211> 449  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 16

<400> 28  
 gaaaattggt gttgttttgg aacactagta gaccagaggc ttctagtaag gtagttgtgc 60  
 tcactgagga gggggaagga tgatggaagt tgagaaaagg agtaaggatt atgctcgtat 120  
 gtttgaccag caagtcggtc tttatgaaga ctatgctcgt ggacatggac tcaatgcaaa 180  
 atgtttatcc attctcatgt ggatttatta taatcccga ggtgtgacgc aaaactgggt 240  
 cagtaagaag acctattcaa gcaaacaagt tgtcaatgct actgtaaaga aatTTTTTgga 300  
 tggaggcctg gtagttctag aggagaatcc agcagataag cgacataaga aaattaaatt 360  
 gacagaggag gggcaacaat ttgctagtcg cattttggat cccttagagg aggcggaaaa 420  
 taaggcgctg tctcaactca gtcaggagg 449

<210> 29  
 <211> 410  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 18

<400> 29  
 gcgttttggg acaagtagct taagagaaac ctagagaaat ctaggggttt tgcttttata 60  
 tatctttaca ttgtttaaag aaaatagcat ttcaaaaact ttttgaaaaa aatgtgatata 120  
 tctgagcata ttttttgaaa tcggtaacat ttatattgta taatatagtt cgtaaaaaaa 180  
 tatattttcg aaagtgagat ttacattat ggctaaaatc gttgttgcgc gtgctaacca 240  
 tgctgggtact gccgcaatca aaactatggt gacaaattat ggtcaagaaa atgaaatcgt 300  
 tgtatttgac caaaactcac atatttcatt cttgggttgt ggtatggctt tgtggatcgg 360  
 tgagcaaatt ggcggtcctg aaggactctt ctactcaaac aaagaagagt 410

<210> 30  
 <211> 437  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 19

<220>  
 <221> misc\_feature  
 <222> (40)..(40)  
 <223> n is a, c, g, or t

<220>  
 <221> misc\_feature  
 <222> (127)..(127)  
 <223> n is a, c, g, or t

<400> 30  
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 agatggcact caatttcatt aggaagaaca gaagagtaaa aagcctgtct aaccacccta 120  
 acatagnata ttctctcttt ttcatctatt ttatcaaaaa atcgggtgctt ttctaccatt 180  
 tgtcaagttc atcaaggtat ttgacgaaaa atattttgtg tctcgatcat caaataagga 240

aattgtttta ttttgacta aagttacgtg taaaaagtgc atacaaaacc aacaccttat	300
gttgaaattt tttgataagg tgttacaatg atagagcata aacagtttta ccgatttttg	360
gttgaagcgt aatcgtaaaa tttgttatgc ataatgaggt aatacattgt ccgaatgaga	420
cgatgtatgg aggcaat	437

<210> 31  
 <211> 417  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 2, 4, 28

<220>  
 <221> misc\_feature  
 <222> (58)..(58)  
 <223> n is a, c, g, or t

<400> 31	
aagacggcgt caaggatgac aatcttgtgg tgacgaccac ccagaaactg gcgtagcntt	60
taccgtggcc ggaatcatga tcgcggtttt ccagccgttc atgcagttcg gttgttgctt	120
tgaacagcaa gaatatcccc ccgaacaaca taatcaggtc gcgtccggag aaggagaaat	180
ccatgacggt aaaatagcgg tttggtcagc gtgaccatcc atgaaatcag cgacagcagc	240
cccagacgca taatcagcgc cagtataaac ccagcaaac gcgctttatc gcgttgtttt	300
ggcggcagtt tgtcagcaag aatggcgatg aagaccaggt tatcgatacc cagcacaatt	360
tcgagaacaa caagcgtgag tagccccgcc caaattgagg ggtccattaa gaattcc	417

<210> 32  
 <211> 444  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 20

<400> 32	
agttcagatg ttcggttttag gaattgccgg cgtctggctg tcgattttga tggacctgct	60
cttgcgagcg atttttctga cttggaggtt tattgtgcaa acacgaaaac tggctgaata	120

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ggctagtttt ttggtataat atcagtagaa tgataaaaag gagataatca gatgaaaacc 180
attcacacag ataaggcacc tgcagcaatt ggcccatacg ttcaaggga ggttggttga 240
aatttcctat ttgcctctgg tcaagttcct ttgtcacctg aaactggtga agtggttgg 300
gaaaccattc aggagcagac tgagcaagtc ttgaaaaata tcgcagcaat tttatcagaa 360
gcaggaacag actttgacca tgtggtgaag acgacttggt tcctaaaaga tatgaatgat 420
tttgtagcct ttaatgaagt ttat 444

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<210> 33
<211> 480
<212> DNA
<213> Streptococcus suis

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<220>
<223> ivs 23, 24

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<400> 33
tctgcactgt tgcgctgcct ataagttcta cgttcagtag tagatgaaat gttcagagga 60
agtggtatgg gttccaactt agtaaaatta gtcattgatg atttggcgaa cagaaattcc 120
aaagcctttc aaatcgcagt tgaagaagag aaattgggaa cctggaagtt ctacaagaaa 180
ttagttttga agaacaggac gggctagtct atttgcgaaa acgcaagagt tcagcaaatt 240
cttgcttttt ttgatataat ggtagaagca gttttaagag gtatcaggta tgaatattca 300
acaattacgc tacgttgtag ccattgcaaa cagtgggtaca tttcgagagg cggctgagaa 360
aatgtatgtg tcccagccta gtttgtccat ttccattcgt gatttggaag aagagttagg 420
ttttcaaatt tttagccgaa ctagttcagg aacttttttg acacaaaaag ggatggaatt 480

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<210> 34
<211> 418
<212> DNA
<213> Streptococcus suis

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<220>
<223> ivs 25

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<220>
<221> misc_feature
<222> (359)..(359)

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<223> n is a, c, g, or t

<400> 34

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ggagatagca atgcttaata tttttgtatt agaagatgat ttttttcagc agagcagggt 60
agaaaatgct attaggcagt gtgttgaaga aacgtcagta aggtataaat tcctagaagt 120
tttttggtaaa ccaaataat tattggaatc aattgaggaa gcagggaatc atcaattttt 180
cttttttagat attgaaataa aaggagaaga aaagaaagga atggaaatcg ctaaagaaat 240
ccgggctcga gacacctatg ctgctattgt ctttgtaaca actcactcag aatttatgcc 300
agtaacatat cgttatcagg tttctgcttt agattttata gataaaggcc tggaggatng 360
tgactttcaa aaggcagtat cagatgtctt agtgcacgtt tttgaaaata ttgatcat 418
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<210> 35

<211> 446

<212> DNA

<213> Streptococcus suis

<220>

<223> ivs 29

<400> 35

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ggcaagggtg ggtaaatttc taattggtga caaggcactt gaattctacc cagatagcaa 60
cgttgaacgc tatatccaga ttccttggtc agaaatgact agcattggcg caaacgttt 120
ctggcaaagc aatcagccgt cattttgaaa tttatacaga gaaaagtcga tttcttggtg 180
gcatctaaag attctggtaa gattcttaaa attgcccgtg agcatatcgg caatgaaaaa 240
gttgtgaaat taccgactct tatgcaaaca atcggcagaa aaatttcgaa tctatttgcc 300
aaaaaataaa aattcaagta taatagtaga aacggataag tagcatctgg ctcttccag 360
aaagtctgcg gtcgctgtga gcagatagga aaaagttgtg aaattctacc gttatgaaat 420
tatcaaaata caatcaagtg cacaga 446
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<210> 36

<211> 416

<212> DNA

<213> Streptococcus suis

<220>

<223> ivs 3



<400> 36  
 ggattatcta ctataagcag tattcagaag ggcatgagga caagaaatcc tacaagattc 60  
 tacaagaagt aggcattgagc cagaaggctg tcaagaaaac aattaactcc caaacactta 120  
 cggctcttctt tatgcctttg gtcattggcga ccctacactt tgtcatcgcc cttatcatgc 180  
 tcaagcaaat gctactaagt tttggtgtta cctcatcact aatgatttac acagtcagtg 240  
 gcatcacccct actggcagtc actctgattt actttgtcat ttacaagtgg actagtcgca 300  
 cttattatcg cattattgaa cggtagcaga agtctcgcc tgtgcgagat ttcttgcttt 360  
 ttcagggaaa tgggtgttaca atggtaatac caaaggaata ctgaagagg tgagaa 416

<210> 37  
 <211> 263  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 31

<220>  
 <221> misc\_feature  
 <222> (104)..(104)  
 <223> n is a, c, g, or t

<400> 37  
 acgaaaatdg atggatccat gcataaactg catcccttaa cttgtttttc gtgtgcctat 60  
 tttttgtgaa tcgaattcga gtcgcccct cctgaccacc tatntgcatc aagtgccaaa 120  
 tgaccagtcg agtgtgcggt tagacaacta ctatacgggc aaggaactgg agattgagtt 180  
 ggatgtggct ttgactccta gccaaaatgc ccagcgggtac ttcaagaagt accagaaact 240  
 caaggaggcg gtcaagcacc tga 263

<210> 38  
 <211> 403  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 32, 35

<400> 38

atatttgctc tcctgctctt taggggacaa tggaaaaagt agtctgtatc caacatttta	60
caaagtagga ttttttctat aaaatagatt gtatatgaca ttcaaatacca ttctcaaaca	120
actcaaacta tttgattata tcttaatcgg attcacccta gttttatcct ttcttccagc	180
aattttttacc tacacacaac tgacaacaga tgcaaatgag gcaaaaacaa ttgcctatgt	240
ccgcatcaat ggtgaggtgg tcgaccaatt tgaattatca aaggacacac cccgtcaaga	300
aaagacctac tatcccaatg aaggggcaata caatatcatt gaagttgatg gcgaacgcat	360
tcgtgtcaag gaagacaata gcccagacca aatcgccgtt atg	403

<210> 39  
 <211> 401  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 33

<400> 39	
actcagttga acggagtagg atttataggt aaattgcctc caaatatcgt aagacaatcc	60
tctattgaaa aataggggat tgtttggtta gaaataatgg tggagattct gtaaaaagcg	120
aaagtgggtg gaaagttagg gtttagccga gaaaaagaga cttttctatc tatctttcac	180
aattttctgt caatttgtgg tagaatagaa aaaatagatt ttttatgagg gataccatga	240
cattagtata tcaatcaaca cgcgatgcta aaaatactgt atcggctagt caagcgatct	300
tgcagggctt ggcgaccgac ggtgggttgt ttacaccgct ttctattcca acagttgact	360
tggatttttc tgttttgaaa gatgcttctt atcaagacgt t	401

<210> 40  
 <211> 404  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 34

<400> 40	
gtttatcggt cgctggagga aaagggttat aatccgatta accaaatcat tggctatgta	60
ttaagtgggg accctgctta tattcctcgc tataatgatg cccgcaatca gattcgtaag	120

catgaacgag atgaaatcat tgaagaattg gtgcgctact atttgaaagg gaatgggatt	180
gacctctaata gagaataatg ggattagacg tcggttccaa gacagttggt gtagccattt	240
cagatccggt aggttttcacg gcccaagggt tggaaatcat cccaatcgat gaagaaaagg	300
gcgaattcgg tctggagcgt ttgaccgaac ttgtagaaca gtacaagggt gataaatttg	360
ttgtaggctt gccgaagaat atgaataata ctagtgggtcc acgt	404

<210> 41  
 <211> 384  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 36

<400> 41	
ggtataatta tctgataaaa aactttggag acgacagtga gtttagaaaa ttacatgccg	60
gattttgcct tggaaaaggc ttatgacgtg accgtcgaaa gcttgaaaaa acatggcata	120
aaagtagtgt ttgttgactt ggataatacc ttgattgctt ggaataatcc cgatggtacg	180
ccagagatgc gccagtgggt acatgatttg caggacgcag gtattcctgt tgtggtggtg	240
tctaacaata aatacgaacg tgtcaaacgg gcggttgaaa aatttgggat tgaatttgaa	300
gccttcgctc tcaagccttt cacctttggg attaacctg ctttgaaacg ctttgatgct	360
cagccgtatg aggtaattat gatt	384

<210> 42  
 <211> 413  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 5, 10, 12, 22

<400> 42	
acgcacttgc tcgcgtagtc gatgaattag atgtaccgt tatggctttc ggtcttaaaa	60
atgatttccg aaatgaacta tttgaagggt cccaacattt gctcttattg gctgataaat	120
tagatgaaat caaaacaatc tgccaatatt gttctaaaaa agcgacaatg gttttgagaa	180

cacaggatgg aaaacctact tatgaaggag aacaaatcca aattggtggc aatgaaacct	240
acattcctgt ctgtcgcaaa cattatTTTT caccagaaat taaagattta ccctaatttt	300
tgaaaatgaa atgagaagca actgtaaact gagcaactat atagaactga atttgcctat	360
gactctgtgc caattttcat aacttacata ctacggcaaa ggaattgaac acg	413

<210> 43  
 <211> 428  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 6, 7, 13, 14

<400> 43	
gaagggatta aacaatccta tgctattcag gctgttcgtg aaattcggat tatcgttcat	60
cctaacaagg tcaactgatga tcagattacc atcttggccc atgatgttcg tgagaaaatt	120
gaaaataatc tggattatcc aggaaatatc aaaatcacag ttatccgtga aacaagagca	180
acagatgttg ctaagtaa at gtagaagagt ccgaagggct ctttttctac tggctcaaag	240
ttcgttttgg gttgggaata gaaaatagaa aatatttttaa tcgtatttaa aagcagttga	300
aattcatgct aaattttgtt aacttagaat gaaagattta aaaggagata tcatgaaaga	360
gcgaggctta ctcatgtct tttctgggtcc atctggtgcc ggaaaaggaa cagttcgaaa	420
ggaaattt	428

<210> 44  
 <211> 383  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 8

<400> 44	
cttcaaagga cccaggacc tttgaattct caaatacgca tcatgttgac agttgccaca	60
cctacaccaa aatcaaatgc caacaagcgt tgagtcgggt aatagcgtaa gtagcgcaag	120
gtcatgataa gctgctcttc catacttaga cggcgtgggc gtctctcttt tcggtgttgc	180
tcttgataag cgtcagtgag acaatcaagc atcagatgaa acgtcgcttt ttacaccta	240

tcaacaatttt gaaattctct gagtttaatt ttaagacttt ttcgtatggt gtttccatac 300  
 ctttagtata ccgcctttga gttaccgaac aagtctattg ctaaacttga tgaagggttg 360  
 attgtctggt ataatatattgg ata 383

<210> 45  
 <211> 415  
 <212> DNA  
 <213> Streptococcus suis

<220>  
 <223> ivs 9, 17

<400> 45  
 gcctatgaga ctcatTTTTcc ctgtctcaac tgctctaagc aattggttaca ggttggttgt 60  
 aagcgggttg tctatatcaa tgaataccgc atggatgact atgctcagta cttgtataaa 120  
 gaaaagggtc gtgagttggt tcatttgcct ctagagggtgg ttaaacaggc atttgcagat 180  
 gccgaattta tctaatagatt ttgtagaaga gtggttgcat agaacaacc tctttatctt 240  
 taagaaaatg ctaggatagt cggatcaatct atgctatact agaaacgtta ttaagtcccg 300  
 aaaaggtagt ttatagacta gttaatatTTT gcagaaacac ttgaaacaca attaaagaaa 360  
 ctggtaatat tgaatagtaa gcgtaaaaac ttactacac ttcagtcact atttt 415

<210> 46  
 <211> 45  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer corresponding to positions 250 to 273 of the fbps gene

<400> 46  
 gcggatccga tgacgatgac aaatcttttg acggattttt ttac 45

<210> 47  
 <211> 32  
 <212> DNA  
 <213> artificial sequence

<220>  
 <223> PCR primer corresponding to positions 1911 to 1892 of the fbps

gene

<400> 47

cccaagcttg ggcataaact agattttcat gg

32